

AMERICAN DRIP SYSTEM STANDARD ENGINEERING SPECIFICATIONS ASD 60-(60GPM) UNIT

ATTACHMENT SECTION 8.0

8.01 EFFLUENT PUMP & FILTRATION CONTROLS

A. The hydraulic filter unit shall be an AMERICAN MFG. COMPANY, INC. Model ASD 60 - (60 gpm) hydraulic unit mounted on a 4.0' x 6.0' aluminum skid.

8.02 FLOW METER
The effluent flow meter shall be 2.0 inch diameter Multi-Jet Model # MJ13-1CH-AAA-1
AWWA Standard C with flange connections manufactured by Master Meter or approver

8.05 HYDRAULIC UNIT FILTRATION RACK

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A. Automatic Filter Assembly
1. The automatic filter shall be a package assembly filter battery consisting of
two - 2 inch single filters.
2. Filters shall be controlled from the computer controller by electrically activated valves.
3. Filter batter shall have the following:
a. inletioutlet diameter: 2 inch growe
diameter: 2 inch growe
diameter: 2 inch growe
diameter: 3 inch growe
diameter: 4 inc

Backflush procedure to operate as follows
 Computer/control calls for backflush to start.
 Backflush initiated by either a pressure differential across filters or a set volume amount

through unit. Filtration rings separate on filter element Hydraulic valves close discharge and open backflush outlet on one bank at a time which takes that filter out of service.

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Water supply for backflush is provided through the filters in service.

Backflushing takes place for 10-15 seconds per filter; discharge of flush water is to wet well.

Remaining filters are sequentially backflushed until entire battery has been cleaned.

Automatic Filter battery shall be ArkalNetafim 2" Disc-Kleen Battery units supplied by

American Manufacturing Co., Inc.

B. Secondary Filter:

1. The secondary filter shall be a 2 inch diameter filter assembly installed in-line on the

downstream side of the automatic filter assembly.

2. Secondary filter shall have the following characteristics:

a. inlet/outlet diameter: 2 inch

8.07 VALVES

Valve body and cover shall be 2 inch diameter reinforced nylon. Valve shall be DOROT "Gal" valve 2 inch diameter plastic valve.

B. Field Control Valves
Valve body shall be 1.5 inch diameter plastic .
Valve shall be Dorot "Gal" valve 1.5 inch diameter plastic valve

A. Famils and retail complete (fig. inigistion system including all values, piolog, filters, flow meter controls, electrical supply. & component header prings, present compressing Biol.NLR drip latings, or retereshroushur breader unlevne, filters, pumps, pump head if applicatable, dedicated modernistatisphone line, float switches, hydraulic unit endosure-building freated, lighted, w/ concrete floor & floor drain), support and populmanced sectived, shown on drawings and as reached to face the implication system into operation of & floor drain), support and appurlemenced sectived, shown on drawings and as reached to face the implication system into operation.

C. Submittals for equipment shall be submitted by CONTRACTOR to ENGINEER as required.

D. Drip Dispersal System Package to be provided by American Manufacturing Company, Inc., 5517 Wellington Road, Gainesville, Virginia 20165 (Phone: 800-346-3132) or equivalent.

2.01 EFFLUENT PUMP & FILTRATION CONTROLS

B. The system control panel(s) shall be in a NEMA-X enclosure. For those panels where "Nema Gold-Must ("NoO), switches for zones, pumps and master valve are not mounted on backplate, those panels what "No hinged door. Dupler alternating pumps are required for all i mounted on backplate, those panels what "Noon are not panels and panels of the control of the panels of the panels

C. The controller shall be a Siemens to be housed inside of the NEMA-4X enclosure. All input/output (I/O) cards and electrical control component shall be located in the NEMA-4X enclosure. The controller shall have a modern for direct connection to a phone line. The controller shall include

shall be located in the NEMA-C4 enclosure. The controller shall have a mocenn or circus cusmous or a product of the purpose of the foliosity cach dose.

1. Alternate pumps following cach dose.

2. Alternate pumps following cach dose.

3. Provide for sudmost first treadfulnes bead on either a total volume amount or pressure differential.

4. Provide for sudmost forward first Flushing based on a total volume amount or time schedule.

4. Provide for sudmost Forward first Flushing based on a total volume amount or time schedule.

5. Provide for sudmost Forward first Flushing based on a total volume amount or time schedule.

6. Provide for sudmost Forward first Flushing based on a total volume amount or time schedule.

7. Provide for sudmost forward first Flushing based on a total volume amount or time schedule.

7. The system controller shall provide for a zone to be resider of taken "out of service". The controller shall have the capability to bysix-wind, that have here taken out of services and dose the next possible zone with normal sequence continuation.

2.03 EFFLUENT PUMPS

A Submersible Turbine Option - Specific Model as per required head conditions.

1. Minimum dejec eitherin pumping system.

2. Maritum adjec eitherin pumping system.

2. Maritum also be adject by the tree operating conditions: multiple zone dose, individual zone forward flush, and filter backwasth.

4. Pumps to be herdwised in a wateringtip jurciton box per local code.

5. Each pump be here dividual breaker, control card or adject for (required).

6. Pumps to be her device wither, disconnect and sthu off vivid even supply pice price to hydraulic unit.

7. Pumps and motion be supplied as part of Anderson Manufacturing (pic highdiso Syptem package.

B. Plooded Suction Option (skid mounted): Specific Model as per required head conditions.

I. Minimum duples effluent journings system.

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2.04 FLOAT SWITCHES

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1. All floats to here her conductor code and be hardwised in a watertight junction box.

2.4 floats to be lut, last open conductor code and be hardwised in a watertight junction box.

2.4 floats to be Lut, last open conductor.

3.4 floats served signal to FLC when activated.

4.4 floats served signal to FLC when activated.

B. The bottom two floats (Off Level & Dose Enable) shall be:
1. 115 volt

Narrow angle pilot duty switch.
 Supplied by American Mfg. Co., Inc.

Wide angle encapsulated differential switches.
 Supplied be American Mfg. Co., Inc.

2.06. HTDRAULIC UNT HOUSING OPTION

B. SYSTEM CONTROL BUILDING

1. Building enclosure shall be required.

2. Hydraulic uniform building shall be heated. (sylted and have proper ventilation with concrete slab type floor and with a corner floor drain.

3. Building to be located on a sold instruction.

3. Building to be located on a sold instruction.

5. Building to be located on a sold instruction.

6. Minimum 2 bot space gradual between the filtration sid mounted unit, control panels and any other required equipment. Minimum 2 bot space gradual between provided around permeter of skid unit in provide adoption errors in space in the space of the spa

2.07 VALVES

C. Crede Valves

1. Stella be ensing-type.
2. Shall be constructed of heavy cast iron, brass or bronze.
3. Shall be constituted of heavy cast iron, brass or bronze.
3. Shall have satisfied flanged or fireaded connections.
4. Shall have a non-corrosive shockless chamber of applicable.
5. Shall be Shandard AVIVM approved or equivalent for use in wastewater applications.

D. Shut-off Valves

1. Shall be iron, brass, bronze or pre-

design.
2. Shall be 1.0.2.0 inch diameter (or greater where required) combined air release and vacuum breaker valve.
3. Shall operate between or septiment of the combined of

3. All joins shall be solvent welded atth the use of purple primer and PIVC glue.
4. All femilier PIVC and lab exchedule 40 PIVC and shall be resulty assemble using schedule 40 PIVC fittings and flexible PIVC to rigid PIVC adhesive.
The fexible PIVC should be solvent welded with the use of purple primer and PIVC glue.
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The result of pivole pivole pivole pivole pivole primer and PIVC give and filter possible of greater than 10% or as required by manufacturer. Top Feed manifolds shall be consistented of schedule 90 PIVC pivole and filter possible primer and PIVC give and filter possible primer and PIVC give and filter possible primer and PIVC give pivole pivol

C. Dry Tuding

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American Manufacturing Company, Inc.

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of 2 feet per second at the distall and of each bised.

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D. Feet Wing:

A feet wing show to a suppose complex complex controller to the feet control valves shall be familiared and installed by system installer.

2. All feets wing shall be appropriately state by an electrician according to local code.

3. All electrical calcular but in EL. Littled usable for direct abruss. We will valepped connections for access to specific connections. The locals shall be elemented from the metal posts or rooks) and have structural capacity for in-ground installation and light vehicular yard care traffic. Adjurdad access is supported.

4.01 INSTALLATION & CONSTRUCTION

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A. System installand syndraulic unit building, correlos, computer, floats and valves shall be installed according to plans and in accordance
1. Purmps, litteration such, hydraulic unit building, correlos, computer, floats and valves shall be installed accordance with all appropriate costs and regulations.
3. In-yelvania uniticonized building shall be heated and lighted with concrete slide type floor and with a correct floor drain. Exhaust fan installation explorated building shall be recorded building shall be installed and produced building shall be concreted on the formation and in accordance with the design diswings.
5. Ding Taking Installation (See "Construction Notes" section below):
5. Ding Taking Installation (See "Construction Notes" section below):
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I. Install selection (and phone line if applicable)
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5.01 SYSTEM OPERATION

No When activated by the rising level of effluent in the dosing tank, the controller shall enable the disposal cycle, and as dictated by the controller, pump the effluent through 115 micron disc filters and then to final drip dispersal.

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Consequence of the Consequence o

c. The does refluent from the forward fitteriors filters shall be described to the colder manifold.
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C. Forward Frield Flush Licach day zone shall automatically undergo a periodic "Forward Field Flush" every fifty cycles or 15 days (whichever occurs first) to scour the 2.2 Forward Field Flush to be accomplished by automatically opening a Zone Return valve to allow effluent to return to the head of the system after passing through the drip field.

after passing through the drip field.

3.1 6 gmp erid situal lateral correction shall be provided to maintain minimum socuring velocity of 2 feet per second at the distal end of each lateral.

4. Zones shall Forward Field Fhath individually.

Finaling volume to be a minimum of their times the volume of the drip tubing.

6.01 DRIP SYSTEM WARRANTY

6.02 SERVICE & MAINTENANCE A. Contractor shall provide a one year maintenance warranty beginning at the expiration manufacturer's original one year warranty (see above "Drip System Warranty).

C. Upon expiration of the manufacturer's initial "Remote Operation & Monitoring" agreement additional years of "Remote Operation & Monitoring" may be purchased. Contact manufacturer for details.

DRIP SYSTEM SPECIFICATIONS

DISC FLTERS - Disc filters shall be oblique filter, entirely of plastic, with 34" male end connections to NPT schedule 40 pressure PVC. The filter denement shall consist of growed rings, mounted on a spline, forming a cylindrical filter body. The rings are to kept together by a spring seated filt be obtained in the filter cover. The out-in filter shall be of the screen wit type with militer budber oring seal. The body materials shall be polyreter, the spline and rings shall be made of polypropylene, and the spring shall be stainless steel. The nominal filtration capacity of the filter shall be 1 film circons.

AUTOMATIC CONTROL VALVES - The automatic control valves shall be 1.0" diameter solenoid activated disphragm valves by Bermad. The body and cover shall be reinforced nylon. The metal parts shall be stalentes steed, the disphragm shall be nylon-fabric reinforced polytogener. The seals shall be Buna-N. These valves shall operate described using singularitie pressure to open and to close.

MASTER VALVE - The automatic master control valves shall be 1.5" diameter activated diaphram valve by Donot. The body and cover shall be reinforced nylon. The metal parts shall be stainless steel, the diaphragm shall be nylon fabric reinforced polyisoprene. These valves shall operate electrically sulpin jydraulic pressure to open and to close.

RETURN PRESSURE ASSEMBLY FOR ZONE RETURN VALVE - The automatic zone return valve shall, in the event the drip zones are over 10 feet in vertical elevation above the hydraulic unit, have installed a "return pressure assembly". The assembly is to be used to prevent the line from draining after or during each dose.

GENERAL VALVES - All ball valves shall be Schedule 40. Check valves shall be of the swing check design of metallic bronze or brass with corrosion resistent metal hinge pin for use in wastewater. Gate and Globe valves shall be true-union pvc type with stem adapters for surface operation.

FLOW METER - Flow meter shall be disk-type multi-jet 58° to 2" meter with total enclosure and an electrical output register. The meter shall be bronze with examinary broaded ends with bronze broaded union and connection. The meter shall provide connect closes to the control of the control o

FLOAT SWITCHES - The system will operate on four floats. The bottom two floats ("Off" and "Enable" shall be Connery 10 amp. 115 volt, narrow angle supplied by American Manifacturing. The top two floats ("Peak" and High Level") shall be Connery 10 amp, 115 volt wide angle differential microswitches supplied by American Manufacturing.

GRAVITY PIPING - All gravity piping shall be schedule 40 PVC DWV as a minimum. Fittings shall be Schedule 40 PVC suitable for underground installation. All joints shall be solvent welded with the use of primer and PVC Glue.

NON DEPORT LINE PRESSURE PRIVE. All non-dispose line pressure piping shall be PVC Schedule 60 pressure rated. Ridgid piping shall be standard RIMIT 1180 for one with socker with wide Schedule 40 filtring. Fixx piping shall be Schedule 40 PVC fits pipin for use with pressure filtings.

AIR RELEASE VALVES - Air release valves shall be 2" diameter Guardian air release and vacuum valves by Netafim. Body shall be made of fiberglass reinforced U>V> Protected nylon. Maximum working pressure 150 psi.

WIRE SPLICES - Field wire splices shall be installed in suitable wire splice pull boxes with waterproof connections for access to splice connections. The boxes shall have structural capacity for in ground installation and light vehicle yard care traffic. SPECIAL DRIP EQUIPMENT - All non-specified drip equipment shall be as supplied by American Manufacturing Company, Inc. including the controls, drip hydraulic unit, pumps, and special fittings.

HYDRAULIC UNIT ENCLOSURE - The enclosure shall be made of fiberglass with latching cover. ENCLOSURE INSULATION - Insulation shall be made with two layers of aluminium separated by 5/16 inch dead air space with a minimum Rwalue of 8.3

TOP FEED MANIFOLDS - Top feed supply and freturn manifolds shall be made with pressure rated Schedule 40 PVC> ZONE RESTING OPTION - The system controller shall allow for a zone to be rested or taken out of service. The controller shall have the capability to bypass a zone that has been taken out of service and dose the next available zone.

PIPE BEDDING - In ground piping shall be installed according to local codes. Piping shall be installed on original soil or suitably compacted fill or gravel bedded excavaions on original soil. The free standing piping shall be schedule 40 PVC and assembled with restraint loints.

REMOTE OPERATION & MONITERING - This system requires Remote Operation and Monitering package. A dedicated data/phone line will need to be installed and connected to the Drip controller prior to system start-up. Data logs will be kept and periodically provided to the system permitting agency.

General Construction Notes - American Manufacturing "Perc-Rite" Drip

1 All installation and recent values and the second of the

19), No extends included and an advantage of the second and a second a

COLD WEATHER INSTALLATION NOTES

Minimum construction techniques for all American "Perc-Rist" (Prip systems in cold weather climates:

11 Top feet" manifolds should be used on all sites with a discernible slope to allow for proper drainage of the manifolds and the 34" and 1/2"

12 The main supply and return lines abell be installed below the frest line and shall feed the shallow "top feet" manifolds with a single vertical

21 The main supply and return lines abell be installed below the frest line and shall feed the shallow "top feet" manifolds with a single vertical

23 The main supply and return lines abell be installed below the frest line and shall feed the shallow "top feet" manifolds with a single vertical

30. On fast alses where "top feet" manifolds will not drain therefore requiring the use of side feed manifolds, 12" cover is recommended between
highest point of 12" "Aska fateable PVP joe (not loop connection) and final grades. In othing public places lines that 12" the vender required properties are not to the properties of the shallow of the public properties less that 12" the vender required properties and the shallow of the shall be shall be a shall be shall

Please see that on the connections below.

Dense system for cover to be extracted the cover of t

cannot be stabilished, then trenches and tubing to be covered win a thick layer (minimum if 9) of mulch, strawflay, etc. until such turf cover is established. Cover must be stabilished and minimization until necess vegative to its established, among of cover may not be allowed to be adjusted to 19. All valve boxes that house "monto zone valves" shall be insulated by contractor. Insulation to consist of either the board, bagged Styryfoxam placed on a lede of gravel or screening (etc.*). Postiller great expert more issues because the contractor representation of the property of the contractor responsibility or ensure these longs that yellows are innocuraged to reflect the values of grand-insulation and pumps shall be if its contractors responsibility or ensure these loops stay developed during and after the loops are backfiller.

7. All main supply and referr interches to be installed before the local freet film. If this is not possible due to be interched to the other interches to be installed before the local freet film. If this is not possible due to be interched to the other interches the property of the contractors responsibility or ensure them to be called the film. If this is not possible due to be interched to the interched property of the contractors represent the contractors are because the contractors are because the contractors and the property of the contractors are because the contractors are co

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FALCON CREST SUBDIVISION LAKE VILLA, ILLINOIS **GENERAL NOTES AND SPECIFICATIONS**

SHEET OF 11 ARO LCHD DATE: 7/12/2006 REVISION

ARTHUR R. OLSON & CO. 965 WESTSHORE DRIVE

FOX LAKE, IL. 60020